

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. – 3. (Canceled)

4. (Currently amended) A host-vector system, which comprises

- a. A host chromosome comprising
 - i. an activatable control sequence, wherein the activatable control sequence is activatable by an inducer;
 - ii. at least one sequence that encodes a repressor, wherein the sequence is operably-linked to the activatable control sequence; and
 - iii. at least ~~one~~two ~~essential genes~~ gene, wherein ~~one essential gene is an essential gene necessary for synthesis of the murein rigid cell wall layer, and one essential gene is an essential gene necessary for synthesis of diaminopimelic acid or is an essential gene necessary for synthesis of D-alanine~~ ~~the essential gene encodes a polypeptide that is necessary for synthesis of a rigid layer of a cell wall of a prokaryote, and wherein the essential genes are~~ gene is inactivated or operably linked to an activatable control sequence;

AND

- b. At least one vector comprising
 - i. a prokaryotic activator-promoter sequence;
 - ii. at least one origin of replication (ori);
 - iii. a first regulatable prokaryotic promotor sequence, wherein the first regulatable prokaryotic promotor sequence is repressible by a first repressor;
 - iv. a second regulatable prokaryotic promotor sequence, wherein the second regulatable prokaryotic promotor sequence is repressible by a second repressor;

- v. at least two one essential genes gene, wherein the one essential gene is an essential gene necessary for synthesis of the murein rigid cell wall layer, and one essential gene is an essential gene necessary for synthesis of diaminopimelic acid or is an essential gene necessary for synthesis of D-alanine, and wherein the essential genes of the vector complement the essential genes of the host chromosome that are inactivated or operably linked to an activatable control sequence gene is;
 - vi. at least one transcription terminator sequence; and
 - vii. a site for insertion of a gene encoding a desired gene product.

5. – 7. (Canceled)

8. (Currently amended) The host-vector system of claim 4 A host-vector system, which comprises

- a. A host chromosome comprising
 - i. an activatable control sequence, wherein the activatable control sequence is activatable by an inducer;
 - ii. at least one sequence that encodes a repressor, wherein the sequence is operably-linked to the activatable control sequence; and
 - iii. at least two essential genes, wherein one essential gene is an essential gene necessary for synthesis of the murein rigid cell wall layer, and one essential gene is an essential gene necessary for synthesis of diaminopimelic acid or is an essential gene necessary for synthesis of D-alanine, and wherein the essential genes are inactivated or operably linked to an activatable control sequence;

AND

- b. two vectors, each of said vectors comprising
 - i. a prokaryotic activator-promoter sequence;
 - ii. at least one origin of replication (ori);

- iii. a first regulatable prokaryotic promotor sequence, wherein the first regulatable prokaryotic promotor sequence is repressible by a first repressor;
- iv. a second regulatable prokaryotic promotor sequence, wherein the second regulatable prokaryotic promotor sequence is repressible by a second repressor;
- v. at least one essential gene, wherein the essential gene is an essential gene necessary for synthesis of the murein rigid cell wall layer, an essential gene necessary for synthesis of diaminopimelic acid, or an essential gene necessary for synthesis of D-alanine;
- vi. at least one transcription terminator sequence; and
- vii. a gene encoding a desired gene product,

~~wherein the host vector system comprises two vectors, wherein the essential genes of the vector complement the essential genes of the host chromosome that are inactivated or operably linked to an activatable control sequence and wherein the desired gene product and the essential gene on one vector is different from the desired gene product and the essential gene on the other vector.~~

9. – 14. (Canceled)

15. (Currently amended) A microorganism comprising the host-vector system of claim 4,
wherein said vector further comprises a gene encoding a desired gene product.

16. – 17. (Canceled)

18. (Original) A vaccine comprising the microorganism of claim 15.

19. – 20. (Canceled)

21. (Original) A method for delivery of a desired gene product to a eukaryotic host, which comprises administering to the eukaryotic host a microorganism of claim 15, wherein a prokaryote expresses the desired gene product.

22. – 46. (Canceled)

47. (Previously presented) The host-vector system of claim 4, further comprising a gene encoding a desired gene product.
48. (Previously presented) The host-vector system of claim 47, wherein the gene encodes an antigen.
49. (Currently amended) The host-vector system of claim 48, wherein the antigen is from a bacterial, viral, fungal, or parasitic pathogen.
50. (Currently amended) The host-vector system of claim 49, wherein the antigen is from *Eimeria*, HBV, or *Streptococcus pneumoniae*.
51. (Currently amended) The host-vector system of claim 4, wherein the essential gene is *asd*, *murA*, *dapA*, or ~~alr~~ *alr*.
52. (Previously presented) The host-vector system of claim 4, wherein the essential gene has a mutation that changes an ATG start codon to GTG or TTG.
53. (Currently amended) The host-vector system of claim 4, wherein the terminator sequence is the *nrfG* ~~nrfG~~ transcriptional terminator.
54. (Previously presented) The host-vector system of claim 4, comprising at least three terminator sequences.
55. (Canceled)
56. (Previously presented) The host-vector system of claim 4, wherein the inducer is arabinose.

57. (Previously presented) The method of claim 21, wherein the eukaryotic host is a vertebrate.
58. (Previously presented) The method of claim 57, wherein the vertebrate is a human, mouse, rat, or bird.
59. (Previously presented) The method of claim 21, wherein the microorganism colonizes a lymphoid tissue of the eukaryotic host.
60. (Previously presented) The method of claim 59, wherein the lymphoid tissue is in a liver, spleen, GALT, or mesenteric lymph node.
61. (Previously presented) The host-vector system of claim 4, further comprising a mutation in a gene to enhance immunogenicity, wherein the mutation is $\Delta endA2311$, $\Delta relA1123$, $\Delta araE25$, $\Delta araBAD1923$, $\Delta araBAD23$, $\Delta gmd-11$, or $\Delta gmd-fcl-26$.
62. (Previously presented) A method of immunizing a poultry against coccidiosis, comprising
 - a. Administering to the poultry a microorganism comprising the host-vector system of claim 48, wherein the antigen is from *Eimeria*; and
 - b. Eliciting an immune response in the poultry.
63. (Previously presented) The method of claim 62, wherein the poultry is a chicken.
64. (Previously presented) The vaccine of claim 18, wherein the vector is a BAC vector.
65. (New) The host-vector system of claim 8, wherein at least one of said desired gene products is an antigen.
66. (New) The host-vector system of claim 65, wherein the antigen is from a bacterial, viral, fungal, or parasitic pathogen.

67. (New) The host-vector system of claim 8, wherein one of said essential genes is *murA* and one of said essential genes is *asd*.
68. (New) The host-vector system of claim 4, wherein one of said essential genes is *murA* and one of said essential genes is *asd*.